

## **REMARKS**

Claims 7-45 are pending in the above identified application. The Examiner rejected claims 7-45. Applicants have amended claims 7, 8, 38, and 45 in order to better define the claimed invention. Applicants herein traverse the Examiner's rejections of claims 7-45<sup>1</sup>.

### **Claim Rejections under 35 U.S.C. § 103**

#### **Claims 7, 38, 44, and 45**

The Examiner rejected claims 7, 38, 44, and 45 under U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,259,745 ("Chan") in view of U.S. Patent No. 5,822,368 ("Wang"). Applicants note that the Examiner posited a rejection of claims 7, 38, and 45 over Chan and Wang in the office action dated June 28, 2005. A full discussion of that rejection was provided in Applicants response of October 28, 2005. However, independent claims 7, 38, and 45 have been amended to further clarify the claimed invention. Claim 45 was addressed by the Examiner in a separate section, but will be discussed herein with claims 7 and 38.

As was pointed out in the Amendment filed on October 28, 2005, Chan teaches a system where single channels of data are transmitted on multiple physical media. As shown in Figure 1 of Chan, each receiver/transmitter pair is connected by a twisted copper pair. A single channel of data is transmitted on each of the twisted copper pair. As such, Chan does not teach "each of the plurality of demodulators receiving signals from one of a plurality of transmission bands that are transmitted on a single electrically differential conductive pair," as is recited in claim 7, "a plurality of demodulators coupled to a single conducting differential pair, each of the plurality of demodulators receiving signals from one of a plurality of transmission bands," as is recited in

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<sup>1</sup> The Examiner has made numerous characterizations of the claims and the prior art in the Office Action in which Applicants do not necessarily agree. Applicants do not acquiesce in the Examiner's comments even if those comments are not addressed in this response.

claim 38, or “means for receiving an input signal from a single conductive differential pair, the input signal including a plurality of transmission bands,” as is recited in claim 45.

As shown in Figure 1 Chan transmits data between the four transceivers in transceiver block 2 and the four transceivers in transceiver block 3 over 4 twisted copper pair (4a through 4d). Each of the twisted copper pair 4a through 4d carries a single channel of data, not “a plurality of transmission bands” as recited in claims 7, 38, and 45. As stated in Chan,

FIG. 1 . . . includes two main transceiver blocks 2 and 3, coupled together with four twisted-pair cables. Each of the wire pairs is coupled between respective transceiver blocks and each communicates information developed by respective ones of four transmitter/receiver circuits (constituent transceivers) 6 communicating with a Physical Coding Sublayer (PCS) block 8.

(Chan, col. 6, lines 27-34). Further, Chan teaches that “FIG. 2 depicts only one of the four 250 Mb/s constituent transceivers which are configured in parallel fashion and which operate simultaneously to effect 1 Gb/s in order to effect 1 Gb/s communication.” (Chan, col. 7, lines 31-34). Further, Chan teaches that “[s]ince the coding scheme for gigabit communication is based on the premise that signals carried by each twisted pair of wire correspond to a 1-dimensional (1D) constellation and that the four twisted wire pairs collectively form a 4-dimensional (4D) constellation . . . .” (Chan, col. 7, lines 55-59). Therefore, Chan teaches that each channel is transmitted over a single twisted copper pair. Chan does not teach that a “plurality of transmission bands . . . transmitted on a single differential copper pair” as is recited in claim 1.

Further, Wang does not cure this defect in the teachings of Chan. Wang teaches an RF receiver and not a “plurality of transmission bands . . . transmitted on a single differential copper pair,” as is recited in claim 1.

Claim 44 depends from claim 38 and is allowable over the combination of Chan and Wang for at least the same reasons as is claim 44.

#### **Claims 8-9, and 15-17**

The Examiner rejected claims 8-9, and 15-17 under 35 U.S.C. 103(a) as being unpatentable over Chan in view of Wang and further in view of U.S. Patent No. 6,163,563 (“Baker”). Applicants note that the Examiner had rejected claims 8-9, 15, and 39 over the combination of Chan, Wang, and Baker in the office action of June 28, 2005. A response to that rejection was provided in the Amendment of October 28, 2005.

Claim 7 is allowable over the combination of Chan and Wang as discussed above. Baker does not cure the defects in the teachings of Chan and Wang. Therefore, claim 7 is allowable over the combination of Chan, Wang, and Baker. Claims 8-9 and 15-17 depend from claim 7 and are allowable over the combination of Chan, Wang, and Baker for at least the same reasons as is claim 7.

#### **Claims 11-14**

The Examiner rejected claims 11-14 under 35 U.S.C. 103(a) as being unpatentable over Chan in view of Wang as applied to claim 9 above, and further in view of U.S. Patent No. 5,844,950 (“Aono”). Claim 9 was rejected over the combination of Chan, Wang, and Baker

As discussed above, claim 7 is allowable over the combination of Chan, Wang, and Baker. Aono does not cure the defects in the teachings of Chan, Wang, and Baker. Therefore, claim 7 is allowable over the combination of Chan, Wang, Baker and Aono. Claims 11-14

depend from claim 7 and are therefore allowable over the combination of Chan and Wang as applied to claim 9 and Aono for at least the same reasons as is Claim 7.

### **Claim 23**

The Examiner rejected claim 23 under 35 U.S.C. 103(a) as being unpatentable over Chan in view of Wang as applied to claim 8, and further in view of U.S. Patent No. 4,599,732 (“LeFever”). The Examiner had rejected claim 8 over the combination of Chan, Wang, and Baker.

As discussed above, claim 7 is allowable over the combination of Chan, Wang, and Baker. LeFever does not cure the defects in the teachings of Chan, Wang, and Baker. Therefore, claim 7 is allowable over the combination of Chan, Wang, Baker, and LeFever. Claim 23, which depends from claim 7, is then allowable over the combination of Chan and Wang as applied to claim 8 in combination of LeFever.

### **Claim 24**

The Examiner rejected claim 24 under 35 U.S.C. 103(a) as being unpatentable over Chan in combination with Wang in view of LeFever as applied to claim 23, and further in view of U.S. Patent No. 6,351,677 (“Leyonhjelm”). Claim 24 was rejected over the combination of Chan, Wang, and Baker, as the Examiner applied Chan and Wang to claim 8.

As discussed above, claim 23 is allowable over the combination of Chan, Wang, Baker, and LeFever. Leyonhjelm does not cure the defects in the teachings of Chan, Wang, Baker, and LeFever. Claim 23 is therefore allowable over the combination of Chan, Wang, Baker, and

LeFever. Claim 24 depends from claim 23 and is allowable over the combination of Chan, Wang, Baker, and LeFever for at least the same reasons as is claim 23.

#### **Claims 25, and 28-29**

The Examiner rejected claims 25, and 28-29 under 35 U.S.C. 103(a) as being unpatentable over Chan in view of Wang as applied to claim 8, and further in view of U.S. Patent No. 6,121,828 (“Sasaki”). The Examiner rejected claim 8 over the combination of Chan, Wang, and Baker.

As discussed above, claim 8 is allowable over the combination of Chan, Wang, and Baker. Sasaki does not cure the defects in the teachings of Chan, Wang, and Baker. Claim 8 is therefore allowable over the combination of Chan, Wang, Baker, and Sasaki. Claims 25 and 28-29 depend from claim 8 and are therefore allowable over the combination of Chan, Wang, Baker, and Sasaki for at least the same reasons as is claim 8.

#### **Claims 32-37**

The Examiner rejected claims 32-37 under 35 U.S.C. 103(a) as being unpatentable over Chan in view of Wang., and further in view of U.S. Patent No. 6,351,293 B1 (“Perlow”).

As discussed above, claim 7 is allowable over the combination of Chan and Wang. Perlow does not cure the defects in the teachings of Chan and Wang. Therefore, claim 7 is allowable over the combination of Chan, Wang, and Perlow. Claims 32-37 depend from claim 7 and are therefore allowable for at least the same reasons as is claim 7.

**Claims 39, and 41-43**

The Examiner rejected claims 39, and 41-43 under 35 U.S.C. 103(a) as being unpatentable over Chan in view of Wang and further in view of U.S. Patent No. 5,715,280 (“Sandberg”).

As discussed above, claim 38 is allowable over the combination of Chan and Wang. Sandberg does not cure the defects in the teachings of Chan and Wang. Claim 38, therefore, is allowable over the combination of Chan, Wang, and Sandberg. Claims 39 and 41-43 depend from claim 38 and are therefore allowable over the combination of Chan, Wang, and Sandberg for at least the same reasons as is claim 38.

**Claim 44**

The Examiner rejected claim 44 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,128,114 (“Wingo”) in view of Sandberg as applied to claim 38, and further in view of LeFever. However, the Examiner had rejected claim 38 over the combination of Chan and Wang. None of Wingo, Sandberg, or LeFever cure the defects in the teachings of Chan and Wang. Therefore, claim 38 is allowable over the combination of Chan, Wang, Wingo, Sandberg, and LeFever. Claim 44, which depends from claim 38, is therefore allowable for at least the same reasons as is claim 38.

**Claim 45**

The Examiner rejected claim 45 under 35 U.S.C. 103(a) as being unpatentable over Chan in view of Wang. This rejection of claim 45 is addressed above along with the rejections of

claims 7 and 38. As discussed above, claim 45 is allowable over the combination of Chan and Wang.

### **Double Patenting**

The Examiner has indicated that “Claims 1-41 of Co-pending Application 10/071,771 contain every element of claims 1-45 of the instant application and as such anticipate claims 1-45 of the instant application.” However, the Examiner has miss-interpreted the law. The Examiner’s rejection based on double patenting, therefore, is improper.

As pointed out by the Examiner, “A **later** patent claim is not patentably distinct from an **earlier** patent claim if the later claim is obvious over, or anticipated by, the earlier claim.” In re Longi, 759 F.2d at 896, 226 USPQ at 651. In the present case, however, Application 10/071,771 is the later application. Application 10/071,771 was filed later than the present application and claims priority to the present application. Further, the claims of Application 10/071,771 are patentably distinct from those of the present application because they recite a cross-channel interference filter, which is explicitly disclosed and not claimed in the present application.

Applicants request that the Examiner remove this Double Patenting rejection.

**Conclusion**

In view of the foregoing amendments and remarks, Applicants respectfully request reconsideration and reexamination of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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GARRETT & DUNNER, L.L.P.

Dated: October 18, 2006

By: \_\_\_\_\_

  
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